ELECTRONICS, INC.
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NTE239
Silicon Controlled Switch (SCS)

Description:

The NTE239 is a silicon controlled switch in a TO72 type package designed for use as a driver for a numerical indicator tube and switching applications.

Features:

- Selective Breakover Voltage
- Low ON Voltage

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

Collector–Base Voltage, V_{CBO}
- NPN 70V
- PNP . . . . . –70V

Collector–Emitter Voltage (NPN Only, R_{BE} = 10kΩ), V_{CER} 70V

Collector–Emitter Voltage (PNP), V_{CEO} . . . . . –70V

Emitter–Base Voltage, V_{EBO}
- NPN 5V
- PNP . . . . . –70V

Emitter Current, I_E
- NPN . . . . . –100mA
- PNP 100mA

Peak Emitter Current ($t_p \leq 1ms$, $\delta = 0.05$), I_{EM}
- NPN . . . . . –500mA
- PNP 500mA

Collector Current (NPN Only), I_C
- Continuous 50mA
- Peak 100mA

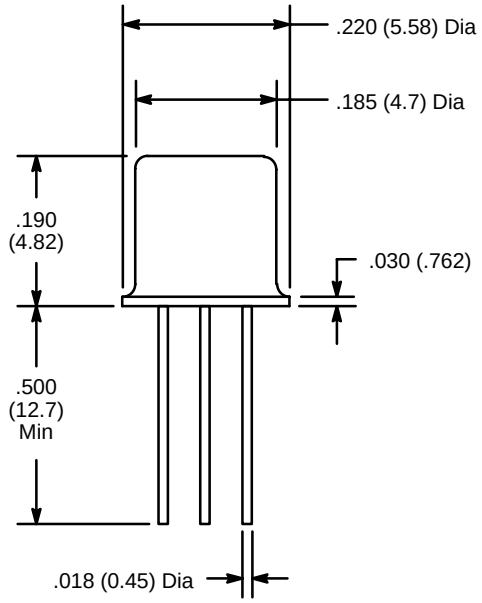
Power Dissipation, P_D 250mW

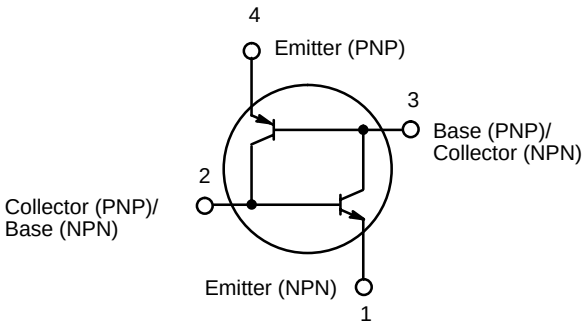
Operating Junction Temperature, T_J . . . . . +150°C

Storage Temperature Range, T_{stg} . . . . . –55° to +175°C

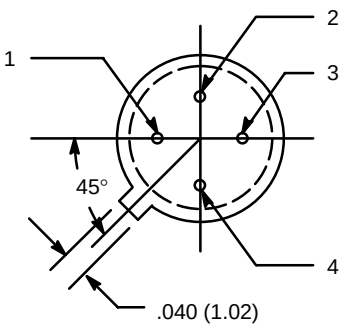
Electrical Characteristics: (T_A = +25°C unless otherwise specified)

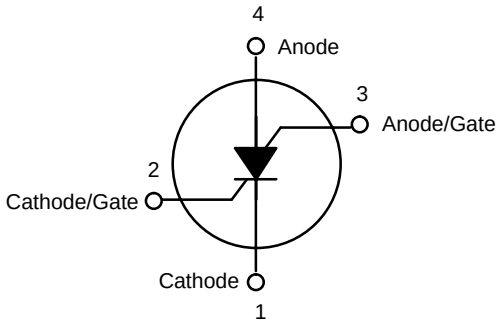
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
NPN Transistor						
Collector Cutoff Current	I_{CER}	V_{CE} = 70V, R_{BE} = 10kΩ	–	10	100	nA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 5V, I_C = 0	–	30	1000	nA
DC Current Gain	h_{FE}	V_{CE} = 2V, I_C = 10mA	50	180	–	
PNP Transistor						
Emitter Cutoff Current	$-I_{EBO}$	$-V_{EB}$ = 70V, I_C = 0	–	0.05	100	nA
DC Current Gain	h_{FE}	V_{CB} = 0, I_E = 1mA	0.72	–	2.5	
Combined Device						
Anode–Cathode Voltage	V_{AK}	I_A = 50mA, I_C = 0, R_{BE} = 10kΩ	–	1.05	1.4	V
Holding Current	I_H	R_{BE} = 10kΩ, I_C = 10mA, $-V_{BB}$ = 2V	0.1	0.5	1.0	mA
Turn–Off Time	t_{off}	R_{BE} = 10kΩ	–	6	12	µs





Transistor Basing





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